



Trinity Consultants is a leading global environmental consulting firm that brings 50 years of experience providing services and solutions in the EHS Regulatory Compliance, Built Environment, Life Sciences, and Water & Ecology markets. Trinity has the technical expertise, industry depth, and specialized capabilities to help clients achieve their goals across the natural and built environments.

Trinity Consultants provides comprehensive meteorological monitoring services to support a wide range of regulatory and project-specific needs. Our services are applicable for compliance-driven monitoring, defensible data collection, and proactive site assessments. We offer end-to-end support—from initial system design and siting assessments to long-term data collection, quality assurance and quality control (QA/QC), and regulatory reporting. Our multidisciplinary team of atmospheric scientists, field technicians, engineers, and data specialists work collaboratively to help clients select and implement the most effective monitoring solutions tailored to their specific objectives.

Meteorological Monitoring Importance

Accurate and comprehensive meteorological data are critical throughout the lifecycle of a meteorological monitoring project. From initial siting and feasibility studies to layout optimization and long-term performance assessments, reliable atmospheric measurements ensure efficient design and regulatory compliance while reducing project risk.

Our Services Include:

- Full-Service Meteorological Tower Installations (up to 120 meters)
- Remote Sensing with Lidar and Sodar for upper-air wind profiling (up to 1500+ meters)
- Turnkey Monitoring Campaigns: permitting, equipment sourcing, site prep, installation, operations, maintenance, and data reporting
- Short- and Long-Term Wind Resource Assessments
- IEC-Compliant Measurement Program Design
- Data Validation, Quality Assurance, and Gap-Filling
- Custom Reporting and Regulatory Support
- Remote Sensing Solutions

We deploy state-of-the-art Lidar and Sodar systems to measure wind speed, direction, turbulence, and shear across the turbine rotor-swept area and well into the free atmosphere. These compact, mobile units are ideal for complex terrain installations, offshore and nearshore sites, supplementing or replacing traditional



meteorological towers, and improving vertical resolution and reducing permitting delays.

Key Advantages

- Minimal permitting requirements
- High-frequency, vertical profiling
- Real-time data availability and remote system diagnostics
- Reduced O&M costs compared to traditional towers

Proven Experience Across the Industry

Our team has supported meteorological monitoring for utility-scale, community, and distributed wind projects across North America. We specialize in the deployment and maintenance of high-quality instrumentation for resource assessment, site evaluation, and environmental permitting.

We're experienced with a range of tower configurations, remote sensing technologies (such as sodar and lidar), and data systems designed for reliable performance in challenging environments. Our monitoring strategies align with international standards like IEC 61400-12-1, ensuring data quality that meets the needs of developers, engineers, regulators, and financiers. From pre-construction assessments to operational monitoring, we deliver accurate, defensible data that supports informed decision-making across the project lifecycle.

Technology-Driven Monitoring

We integrate leading technologies and best practices in all deployments:

- Lidar Systems (ground-based and scanning)
- Sodar units for atmospheric profiling

- Ultrasonic and mechanical anemometry
- Compact met masts for hybrid installations
- Data logging and remote telemetry

Comprehensive Support, Every Step of the Way

Whether your project requires a single-season campaign or a multi-year measurement program, we offer full lifecycle support. This includes conducting feasibility studies and designing tailored monitoring campaigns, managing permitting and regulatory coordination, deploying and validating monitoring systems, overseeing data management with robust QA/QC protocols, and delivering final reports along with clear, professional presentations for stakeholders.

Data Analysis & Interpretation

Data collection is only the beginning of a good air quality monitoring program. Trinity experts assist clients in using diverse analytical methods to review and interpret data to make meaningful and relevant conclusions. Part of the service offering includes real-time data dashboards (accessed at MyTrinityData.com) to aid in the understanding of measured observation data in real-time. Furthermore, the MyTrinityData dashboard can notify stakeholders in real time of any conditions that require immediate action to be taken.



Complete Data Quality Assurance and Management Solutions

To preserve data integrity and high data recovery, Trinity conducts continuous (24/7) interrogation and download of monitoring data through computational and visual scanning of the data by trained meteorologists and air quality specialists. This approach allows us to identify problems quickly so that a site technician can be dispatched promptly, if necessary.

Data validation is performed in accordance to established guidance. Quality assurance project monitoring plans are developed and provide the basis for the monitoring operations. These plans receive regulatory agency approval prior to the implementation of the monitoring program.



Why Choose Trinity?

Leveraging Trinity's 50+ year history of addressing air quality regulatory issues and deep and wide expertise in monitoring, Trinity is uniquely qualified to provide a meteorological monitoring solution that is robust, accurate, and appropriate for specific client needs.

ISO 9001:2015 certified at our corporate office in Dallas, Texas

CONTACT OUR TEAM!

For more information about how we can help your organization, please contact us.

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